

WHAT IS CLAIMED IS:

1. A package comprising:
 - a core having a length; and
 - strip material having a width less than the length of the core wound in a traverse pattern over substantially the length of the core under compression, wherein the strip material is under uniform pressure throughout the entire package.
2. The package of claim 1, wherein the strip material is made of nonwoven material.
3. The package of claim 1, wherein the strip is made of one of fibrous material, air laid material, filtration media, foam, film, mechanical fastening tapes and composites.
4. The package of claim 1, wherein the strip is continuous and includes a plurality of longitudinal strips connected at their ends to form a continuous strip.
5. A package comprising:
 - a core having a length; and
 - strip material wound on the core under compression in a pattern of a plurality of stacked rolls with stepped interconnected strip portions between each roll on the core, wherein the strip material is under uniform pressure throughout the entire package.
6. The package of claim 5, wherein the strip material is made of nonwoven material.
7. The package of claim 5, wherein the strip is made of one of fibrous material, air laid material, filtration media, foam, and composites.
8. The package of claim 5, wherein the strip is continuous and includes a plurality of longitudinal strips connected at their ends to form a continuous strip.
9. A package comprising:
 - a core having a length; and
 - strip material wound on the core substantially across its length, wherein the strip material has a thickness, is nonwoven, has substantially no tension, and is compressed to substantially reduce the thickness, wherein the pressure on each layer of the strip is substantially uniform throughout the entire package.

10. The package of claim 9, wherein the strip is made of one of fibrous material, air laid material, filtration media, foam, films, mechanical fastening tapes and composites.

11. The package of claim 9, wherein the strip is continuous and includes a plurality of longitudinal strips connected at their ends to form a continuous strip.

12. A method of forming a package wherein strip material is formed into a roll supported by a core, comprising:

feeding an uncompressed strip of material to the core; and

winding the strip onto the core with a driven belt that substantially surrounds the core to wrap the strip around the core with the strip under compression.

13. The method of claim 12, wherein winding includes winding the strip in a traverse pattern across a length of the core.

14. The method of claim 13, wherein winding includes moving one of the strip and the core to effect the traverse winding.

15. The method of claim 12, wherein winding includes winding the strip in pattern of spiral wound stacks interconnected by stepped portions of the strip.

16. The method of claim 15, wherein winding includes controlling the winding to form the spiral wound stacks in repeating layers across the length of the core.

17. The method of claim 12, further comprising separating the strip from a larger sheet of material prior to feeding the strip to the core.

18. The method of claim 17, wherein separating the strip includes slitting the strip into plural strips.

19. The method of claim 17, wherein separating the strips includes separating a plurality of strips from the large sheet of material and simultaneously winding the plurality of strips on the core.

20. The method of claim 17, wherein separating the strips includes separating a plurality of strips from the large sheet of material and simultaneously winding the plurality of strips on individual cores.

21. The method of claim 12, wherein feeding includes feeding a plurality of strips to the core and winding the plurality of strips onto the core simultaneously.

22. The method of claim 12, wherein feeding includes feeding a plurality of strips to a plurality of cores and winding the plurality of strips onto each core simultaneously.

23. The method of claim 12, further comprising using a belt that is at least as wide as the strip to cover, wind and compress the strip onto the core.

24. The method of claim 23, wherein the belt has a width substantially equal to the resulting wound roll.

25. The method of claim 23, wherein the belt has a width substantially equal to the strip.

26. The method of claim 12, further comprising connecting plural strips at their ends to form a continuous strip that is wound onto the core.

27. A method of forming a package, comprising:

feeding a sheet of material to a packaging apparatus having at least one core and at least one driven belt that substantially surrounds the core;

separating the sheet into a plurality of strips;

driving the belt under tension; and

winding each strip onto a core with the belt thereby compressing the strip and forming a package under uniform pressure throughout.

28. The method of claim 27, wherein feeding the sheet includes feeding an uncompressed sheet.

29. The method of claim 27, wherein feeding the sheet includes precompressing the sheet.

30. The method of claim 27, further comprising controlling the belt to form a tightly compressed package without damage to the material in the strips.

31. The method of claim 27, wherein winding the strip includes winding a plurality of strips onto one core.

32. The method of claim 27, wherein winding the strip includes winding one strip onto one core.

33. The method of claim 32, wherein winding the strip includes traverse winding the strip across the length of the core.

34. The method of claim 32, wherein winding the strip includes spiral winding the strip on the core.

35. The method of claim 32, wherein winding the strip includes winding the strip in a plurality of spiral wound stacks interconnected by stepped portions of the strip.

36. The method of claim 27, wherein winding the strip includes winding a plurality of strips onto a plurality of cores simultaneously.

37. The method of claim 27, further comprising connecting plural strips at their ends to form a continuous strip that is wound onto the core.

38. An apparatus for forming a package of strip material wound on a core under compression, comprising:

a winding device having a frame, a longitudinal core support mounted to the frame, and a driven belt supported by the frame to substantially surround the core; and

strip material feeding apparatus disposed adjacent to the winding device and including a traverse feeder that moves the strip material longitudinally with respect to the core,

wherein the driven belt is controlled to wind the strip material onto the core under compression.

39. The apparatus of claim 38, further comprising a material separator that separates the strip material from a sheet of material.

40. The apparatus of claim 38, further comprising a controller coupled to the driven belt to adjust the driven speed of the belt and the tension in the belt to control compression of the strip material.

41. The apparatus of claim 38, wherein the strip material feeding apparatus includes a material supply and supply driver that drives the material supply and controls tension in the strip material.

42. The apparatus of claim 38, further comprising a plurality of longitudinal core supports and a plurality of driven belts, and the strip material feeding apparatus includes a traverse feeder associated with each longitudinal core support.

43. The apparatus of claim 38, further comprising a series of rolls supported by the frame to support the driven belt, wherein at least one of the rolls is supported on a movable arm that is selectively movable to release the formed package from the belt.

44. An apparatus for forming a package of strip material wound on a core under compression, comprising:

a winding device comprising a frame, a longitudinal core supported by the frame, and a driven belt supported by the frame to substantially surround the core; and

strip material feeding apparatus including a material separator that separates strips from a sheet of material, wherein the separated strip is wound onto the core by the driven belt.

45. The apparatus of claim 44, further comprising a traverse feeder that moves the strip material longitudinally with respect to the core.

46. The apparatus of claim 44, further comprising a controller coupled to the driven belt to adjust the driven speed of the belt and the tension in belt to control compression of the strip material.

47. The apparatus of claim 44, wherein the strip material feeding apparatus includes a material supply and supply driver that drives the material supply and controls tension in the strip material.

48. The apparatus of claim 44, further comprising a plurality of longitudinal core supports and a plurality of driven belts, and the strip material feeding apparatus feeds each separated strip to each longitudinal core support.

49. An apparatus for forming a package of strip material wound on a core under compression, comprising a frame, a longitudinal core supported by the frame, a driven belt supported by the frame to substantially surround the core, and a controller coupled to the driven belt that adjusts tension of the belt based on parameters of the strip material so that fibers in the compressed strip material do not break.

50. An apparatus for forming a package of open cell foam strip material wound on a core under compression, comprising a frame, a longitudinal core supported by the frame, a driven belt supported by the frame to substantially surround the core, a belt support assembly that adjusts the tension in the belt based on diameter growth of the package, and combined with a package of compressed foam strip material wound on the core having a constant pressure on each layer of strip material.

51. The apparatus of claim 50, further comprising a precompression system including a driven supply belt and a vacuum source that define a feed path for the strip material.

52. The apparatus of claim 50, wherein the strip material is traverse wound on the core.

53. The apparatus of claim 50, wherein the strip material is wound in a plurality of pancake rolls on the core.

54. The apparatus of claim 50, further comprising an antistatic guard mounted on the frame to dissipate static charge from the belt.